additional or new home care resources are required prior to ED discharge; however, few patients returned to the same ED during the one month study period. Given the high proportion of patients assessed, further evaluation of outcomes is warranted.
Keywords: transitions in care, elderly

P054

Interventions aimed at improvement in emergency department related transitions in care for adult patients with atrial fibrillation and flutter: a systematic review

J. Gilbertson, BSc, R. Moghrabi, BSc, S.W. Kirkland, MSc, K. Tate, BScN, W. Sevcik, MD, N. Lam, MD, PhD, B.H. Rowe, MD, MSc, C. Villa-Roel, MD, PhD, University of Alberta, Edmonton, AB

Introduction: Introduction: Transitions in care (TiC) interventions have been proposed to improve the management and outcomes of patients in emergency departments (ED). The objective of this review was to examine the effectiveness of ED-based TiC interventions to improve outcomes for adult patients presenting to an ED with acute atrial fibrillation or flutter (AFF). **Methods:** Methods: A comprehensive search of eight electronic databases and various grey literature sources was conducted. Comparative studies assessing the effectiveness of interventions to improve TiC for patients presenting to the ED with acute AFF were eligible. Two independent reviewers completed study selection, quality assessment, and data extraction. When applicable, relative risks (RR) with 95% confidence intervals (CIs) were calculated using a random effects model and heterogeneity was reported among studies using I-square (I2) statistics. **Results:** Results: From 744 citations, seven studies were included, consisting of three randomized controlled trials (RCT), three before-after (B/A) studies, and one cohort study. Study quality ranged from unclear to low for the RCTs according to the risk of bias tool, moderate in the BA trials according to the BA quality assessment tool, and high quality of the cohort study according to the Newcastle Ottawa scale. The majority of interventions were set within-ED (n = 5), including three clinical pathways/management guidelines and two within-ED observation units. Post-ED interventions (n = 2) included patient education and general practitioner referral. Four studies reported a decreased overall hospital length of stay (LoS) for AFF patients undergoing TiC interventions compared to control, ranging from 26.4 to 53 hours; however, incomplete and non-standardized outcome reporting precluded meta-analysis. An increase in conversion to normal sinus rhythm among TiC intervention patients was noted, which may be related to increased utilization of electrical cardioversion among the RCTs (RR = 2.16; 95% CI: 1.42, 3.30; I2 = %), B/A studies (RR = 2.69, 95% CI: 2.17, 3.33), and cohort study (RR = 1.39; 95% CI: 1.24, 1.56). **Conclusion:** Conclusions: Within-ED TiC interventions may reduce hospital LoS and increase use of electrical cardioversion. However, no clear recommendations to implement such interventions in EDs can be generated from this systematic review and more efforts are required to improve TiC for patients with AFF.
Keywords: atrial fibrillation, transitions in care

P055

An international, interprofessional investigation of the podcast listening habits of emergency clinicians: a METRIQ study

S. M. Goerzen, B. Thoma, MD, MA, T. Horeczko, MD, J. Riddell, MD, T.M. Chan, MD, MHPE, A. Tagg, MD, D. Roland, MD, A. Alenyo, MD, K. Knight, MD, S. Bruijns, MD, University of Saskatchewan, Regina, SK

Introduction: Emergency medicine clinicians (physicians, nurses, paramedics, physician assistants) utilize podcasts for learning. However, their versatility produces variability in the ways they are used (e.g. their speed can be increased or decreased, unrelated activities can be performed simultaneously, or they can be accompanied by active learning methods). This study investigated how and why podcasts are used by an international cohort of clinicians. **Methods:** An international sample of medical students, residents, physicians, nurses, physician assistants, and paramedics was recruited to complete a survey hosted on FluidSurveys software using social media (Twitter and Facebook), direct contact from our international authorship group, infographics, and a study website (https://METRIQstudy.org/). Participants who indicated interest in the study were sent an email containing the study survey. Reminder emails were sent every 5-10 days a maximum of three times. **Results:** 462 clinicians expressed interest and 397 completed the survey (86.0% completion rate). Participants hailed from 34 countries (38.8% Canada, 30% United States, 31.2% outside of North America) and a majority (61.9%) were physicians. Approximately half (45.8%) of the participants listened to podcasts weekly. Podcasts were used to learn core material (75.1%), refresh memory (72.3%), or review new literature (75.8%). Most listened on iPhones (61%) and the native Apple App (66.1%). The preferred Android apps were Pocket Casts (22.8%) and Google Play (18.5%). Many listened to podcasts while driving (72.3%). Active learning techniques such as pausing, repeating segments, taking notes, or listening to a podcast more than once were rarely used (1/4 of the time or less) by the majority of participants. **Conclusion:** This study describes how and why medical education podcasts are used by emergency medicine clinicians and should inform both podcast producers and future research investigating the impact of various listening habits on retention. Further analysis of the data will elucidate differences in listening habits.
Keywords: podcasts, online educational resources, medical education

P056

Non-invasive measurement of the central venous pressure using near-infrared spectroscopy versus point-of-care ultrasound

N. Goumeniouk, BSc, J. Newbigging, MD, M. McDonnell, MD, M. L. A. Sivilotti, MD, MSc, Department of Emergency Medicine, Queen's University, Kingston, ON

Introduction: A fundamental hemodynamic parameter, the central venous pressure (CVP) is rarely available in the emergency patient due the delay and risks inherent to central vein cannulation. Recently, two non-invasive strategies have emerged: a) point-of-care ultrasound to supplement traditional inspection the internal jugular waveform ; or b) near-infrared spectroscopy (NIRS) of the external jugular vein. **Methods:** Five medical students underwent standardized training on both NIRS device (Venus 2000 CVP; Mespere Life Sciences, Waterloo ON) and ultrasound-assisted CVP assessment. During prescheduled, randomly permuted and balanced shifts, a pair of students obtained blinded independent measurements using each device within 10 minutes of each other. High priority subjects likely to have abnormal CVP (e.g. vomiting, dehydrated, heart failure, sepsis) were approached preferentially, followed by a convenience sample of other eligible patients in the emergency department. Secondary outcomes were stopwatch-recorded time from device ready to stable measurement, as well as operator ease, operator confidence and patient discomfort. The blinded treating physician rated each subjects volume status on an ordered scale: depleted, neutral and overloaded. **Results:** We enrolled 104 patients (median [IQR] age 68 [53, 78] years; 50% male; BMI 27.6 [17.0, 47.7] kg/m2; admission rate 27%) in June-August 2017. Treating physicians classified 17 as volume depleted and 12 overloaded. CVP measurements differed widely between techniques: ultrasound 8 [7, 9] cmH2O (3 cases

https://doi.org/10.1017/cem.2018.254 Published online by Cambridge University Press

unobtainable) vs. NIRS 12 [8, 17] cmH2O (13 unobtainable). Agreement and correlation between the two devices was extremely low ($R2 = 0.04$). While neither technique demonstrated a strong association with the treating physicians estimate of volume status, only the ultrasound values increased monotonically with physician estimate. With regards to secondary outcomes, ultrasound measurements took less time (paired difference 50 seconds [95% CI 7, 93]), and operators were more confident (0.63 [0.02, 1.23] out of 10) and at ease (0.78, [0.13, 1.43]) with ultrasound; patients rated discomfort equally (-0.06 [-0.30, 0.18]). **Conclusion:** Non-invasive measurement of CVP remains a challenge in the emergency department. The external jugular pressure by NIRS has very high variability and poor agreement with ultrasound-enhanced inspection of the internal jugular, suggesting that this technique is not yet practical for use by non-experts.

Keywords: central venous pressure, ultrasound, preload

P057

A systematic review of the efficacy of opioid analgesics for the management of acute pain in older adults in the emergency department

J. Gravel, MD, MSc, M. deVries, MSc, D. Horn, MI, S. McLeod, MSc, C. Varner, MD, MSc, Schwartz/Reisman Emergency Medicine Institute, University of Toronto, Toronto, ON

Introduction: Emergency department (ED) providers are frequently challenged with how best to treat acute pain in older patients, specifically when non-opioid analgesics are insufficient or contraindicated. Studies have documented older patients presenting to the ED with painful conditions are less likely to receive pain medications than younger patients, and this inadequate pain control has been associated with increased risk of delirium and longer hospital stays. As there are no guidelines informing best practice of analgesia in the older adult population, emergency physicians often report uncertainty regarding the ideal choice of opioid analgesic. The objective of this study was to compare the efficacy of opioid analgesics for acute pain in older adults (70 years) in the ED. **Methods:** Electronic searches of Medline, EMBASE, Cochrane Central Register of Controlled Trials, Cochrane Database of Systematic Reviews and CINAHL were conducted and reference lists were hand-searched. Randomized controlled trials (RCTs) comparing the efficacy of 2 or more opioid analgesics for acute pain in older patients (70 years) in ambulatory settings (i.e., EDs, clinics) were included. Two reviewers independently screened abstracts, assessed quality of the studies, and extracted data. **Results:** After screening titles and abstracts of 1297 citations, the full-texts of 63 studies were reviewed, and 1 study met the inclusion criteria. This study allocated patients to receive either single dose of 0.0075-mg/kg IV hydromorphone versus 0.05-mg IV morphine and found no clinical or statistical difference between the two treatments in older adults presenting to an urban academic ED with acute, severe pain. **Conclusion:** The lack of published research in this area demonstrates a significant gap in the existing knowledge of the comparative efficacy of opioid analgesics in this growing patient population and that well-designed RCTs are urgently needed.

Keywords: analgesia/opioids, elderly, systematic review

P058

Paramedic recognition and management of anaphylaxis in the prehospital setting

M. Welsford, BSc, MD, R. Gupta, MD, K. Samoraj, MD, S. Sandhanwalia, MD, M. Kerslake, L. Ryan, C. Shortt, PhD, McMaster University, Division of Emergency Medicine, Hamilton, ON

Introduction: Anaphylaxis is a life-threatening condition that paramedics are equipped to treat effectively in the field. Current literature suggests improvements in paramedic recognition and treatment of anaphylaxis could be made. The aim of this study was to compare the proportion of cases of anaphylaxis appropriately treated with epinephrine by paramedics before and after a targeted educational intervention. **Methods:** This was a retrospective medical records review of patients with anaphylaxis managed by primary or advanced care paramedics in five Emergency Medical Service areas in Ontario, before and after an educational module was introduced. This module included education on anaphylaxis diagnosis, recognition, treatment priorities, and feedback on the recognition and management from the before period. All paramedic call records (PCRs) coded as local allergic reaction or anaphylaxis during 12-month periods before and after the intervention were reviewed by trained data abstractors to determine if patients met an international definition of anaphylaxis. The details of interventions performed by the paramedics were used to determine primary and secondary outcomes. **Results:** Of the 600 PCRs reviewed, 99/120 PCRs in the before and 300/480 in the after period were included. Of the charts included, 63/99 (63.6%) in the before and 136/300 (45.3%) in the after period met criteria for anaphylaxis ($p = 0.002$). Of the cases meeting anaphylaxis criteria, 41/63 (65.1%) in the before and 88/136 (64.7%) in the after period were correctly identified as anaphylaxis ($p = 0.96$). Epinephrine was administered in 37/63 (58.7%) of anaphylaxis cases in the before period and 76/136 (55.9%) in the after period ($p = 0.70$). Anaphylactic patients with only two-system involvement received epinephrine in 20/40 (50.0%) cases in the before period and 45/93 (48.4%) in the after period ($p = 0.86$). **Conclusion:** There are gaps in paramedic recognition and management of anaphylaxis, particularly in cases of two-system involvement. These gaps persisted after the implementation of an educational intervention. Other quality interventions and periodic refreshers may be necessary to improve prehospital treatment of anaphylaxis. Limitations include an increase in overall cases and decrease in rate of true anaphylaxis in the after period, which may relate to better case identification after electronic PCR implementation and changes in paramedic recognition.

Keywords: anaphylaxis, prehospital, paramedic

P059

Who will be ready to fly? Characteristics of successful and unsuccessful geriatric discharges from the Nanaimo Regional General Hospital emergency department through the ED2Home program

E. E. Hack, MD, MSc, A. Rashidi, MD, University of British Columbia, Nanaimo, BC

Introduction: As the baby-boomer generation ages, the number of elderly patients with complex health issues visiting emergency departments (EDs) will continue to increase. Evidence suggests elderly patients often have better health outcomes if they can be managed at home with appropriate community and primary care supports in place, rather than being admitted to hospital. ED2Home is a program that launched March 1, 2016 in the Nanaimo Regional General Hospital (NRGH) ED. It aims to assess admitted patients aged 70 and over and discharge them with community supports and follow-up. The aim of this Quality Improvement project was to evaluate how many patients were successfully discharged by the ED2Home program in its first few months, and to characterize which patients were more likely to be successfully discharged versus bounce back to the ED. **Methods:** This Quality Improvement project audited the charts of 87 patients discharged by ED2Home from June-Sept. 2016. Variables examined included the following: age, gender, chief complaint, mobility status,

https://doi.org/10.1017/cem.2018.254 Published online by Cambridge University Press